

ER-2 Flight Summary

Mission: Mission 8

Flight Scientists: M. King, P. Newman

Sortie: 02-953

Date: Friday, 23 July 2002

Pilot: K. Broda

Takeoff: 1315 EDT (1715 UTC)

Landing: 2025 EDT (0025 UTC)

Duration: 7:10

Objectives:

The flight had 4 main objectives: 1) sampling for a TRMM overpass that was scheduled for 1810 UT that would overfly the South Florida region, 2) sampling of cirrus blow-off coming down from Atlantic maritime convection, and 3) coordination of an overflight of the eastern ground site at 1930 with WB-57F, Citation, and Proteus, and 4) sampling of developing Cb over the south Florida region.

The aircraft took off at 1315 EDT, proceeded to waypoint A (25°08'N, 80°32'W), and performed the coordination leg with the TRMM overpass. The plane continued on a heading towards the Atlantic maritime convection near waypoint B (29°34'N, 79°25'W). After returning to waypoint A, the ER-2 was redirected by NPOL to sample a growing Cb that was located near Okeechobee. The cirrus blow-off from this system moved southeastward. The orientation of the ER-2's flight track was parallel to this cirrus between waypoints D (25°40'N 81°30'W) and F (26°54'N 80°42'W). The ER-2 continued to sample the core and cirrus of this evolving system over the entire day until landing at 2025 EDT.

Satellite or fixed coordination:

Satellites (relative to eastern site):

Aqua – 1809 UTC, VZA = 52.37°

(Terra – 1639 UTC, VZA = 52.39°: before launch of aircraft)

TRMM – 1810 UTC, VZA = 6.98°, Heading = 63.3°

Western ground site:

PARSL, Everglades National Park, Gulf Coast Visitor's Center

25 50.7 N, 81 23.15 W

Overpasses of Western Site

19:40:34 UT, Min dist.= 0.35 km

20 :20:35 UT, Min dist.= 0.39 km

20:39:11 UT, Min dist.= 0.40 km

21:14:52 UT, Min dist.= 0.31 km

21:43:42 UT, Min dist.= 0.35 km
22:19:24 UT, Min dist.= 0.33 km
23:14:02 UT, Min dist.= 0.39 km

Eastern ground site:

Kendall-Tamiami Airport
25 39.3 N, 80 25.9 W

Overpasses of Eastern Site

17:42:10 UT, Min dist.= 1.50 km
18:05:39 UT, Min dist.= 1.38 km
19:23:56 UT, Min dist.= 1.44 km

Aircraft coordination:

Nominal take off times (local): WB-57 (1430), Proteus (1400), Citation (1400), Twin Otter (1530), P-3B (1400).

WB-57: In situ sampling along the D-F flight line underneath the ER-2 between 1930 and 2330 UTC, primarily between 14 and 16 km.

Citation: In situ sampling in lower regions of anvil over the western ground site and underneath the ER-2 and WB-57F between 1930 and 2230 UTC, primarily between 10 and 12 km altitude.

Proteus: Remote sensing observations along A-B flight track until the ER-2 crossed over the Atlantic coast, and again along the C-D flight line through the remainder of the flight. Excellent coordination from about 1820 to 2330 UTC.

Twin Otter: Low altitude observations along D-F flight line at an altitude between 1 and 4 km between 2000 and 2315 UTC.

Summary/highlights:

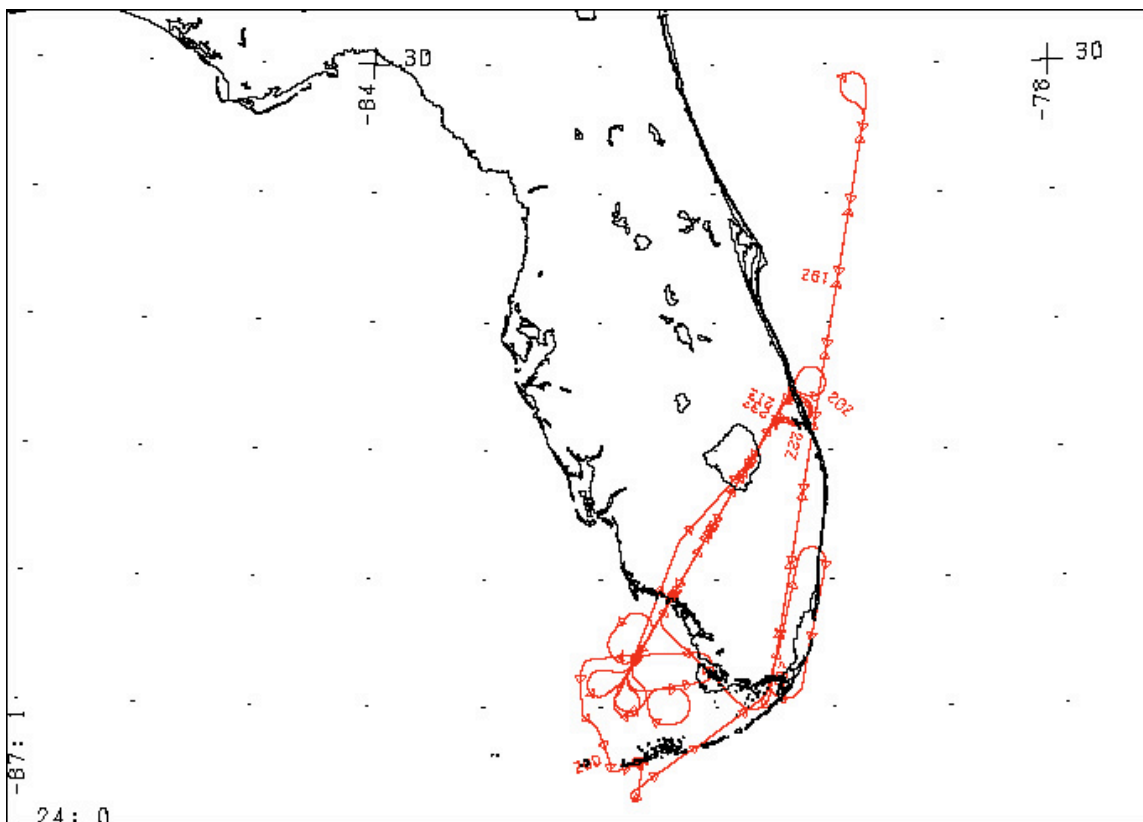
• **Dropsondes:** 6 sondes dropped

<i>Sonde</i>	<i>Rel. time</i>	<i>Rel. long.</i>	<i>Rel. lat.</i>	<i>Spl. Time</i>	<i>Spl long.</i>	<i>Spl lat.</i>
1	18:50:46	79° 41.2'	29° 23.5'	19:07:08	79° 41.0'	29° 25.1'
2	18:59:12	79° 11.4'	28° 26.7'	19:16:30	79° 53.6'	28° 27.1'
3	19:08:20	80° 05.2'	27° 25.2'	19:25:08	80° 06.9'	27° 24.8'
4	21:39:18	81° 39.5'	25° 26.2'	21:56:37	81° 42.6'	25° 25.3'
5	22:24:11	81° 42.0'	25° 21.1'	22:41:01	81° 45.4'	25° 19.5'
6	23:18:56	81° 42.5'	25° 20.4'	23:35:49	81° 46.0'	25° 18.5'

ER-2 science instrument payload and status:

Instrument	Status	Notes
CoSSIR Conical Scanning Sub-mm wave Imaging Radiometer	F	Failure after 5-6 min of data on ascent
CPL Cloud Physics Lidar	G	
CRS Cloud Radar System	G	
EDOP ER-2 Doppler Radar	G	
JLH JPL Laser Hygrometer	G	
MAS MODIS Airborne Simulator	G	
MMS Meteor. Meas. System	G	
MTP Microwave Temperature Profiler	G	
RAMS Radiation Meas. System	G	
SSFR Solar Spectral Flux Radiometer	G	
Dropsonde	G	

**G = good; P = partial data collected; F = failure, no data; NA = status not available
at time of writing**



FLIGHT 02-959 23 JULY 2002 A/C 809 CRYSTAL/FACE
 LAMBERT CONFORMAL PROJECTION: SP1 = 23.4 SP2 = 28.0 CM = -82.0 ROTATED BY 0.0
 17:10:00 TO 0:20:00 UT SCALE 1:4.10E+08 TIME TICK EVERY 5.00 MINUTES